

Division: Industrial
Branch: Electronic Equipment

External Research Project Proposal

Title: Cost Analysis and Industrial Engineering Study of the Electronic Component of the Soviet Surface-to-Air Missile System

Problem: Approximately 3,600 Surface-to-Air missile launching pads have been noted in the Moscow air defense system. A key element in this system is the Soviet S-300 electronic ground control and guidance set. To determine the possible rate of extension of this system to other key Soviet cities a thorough economic analysis of available information is required. The objective of this proposed project is to have available details of the Soviet S-300 system analyzed in an attempt to: (1) state the physical specifications of one complete system; (2) derive a Soviet design and production pattern; and, (3) utilize this information in a production engineering and economic costing analysis. This information will then be used by OER in conjunction with other information to assess the S-300 program in terms of total Soviet electronics requirements and the available electronic mobilization base. This project will require detailed technical analysis, some of which has been partially accomplished by Air Technical Intelligence Center, Electronic Exploitation Group, and the Diamond Ordnance Fuse Laboratory. It will also require specialized industrial engineering analysis to specify the types and quantities of material and labor inputs; the machinery and assembly line operations required; and to estimate the cost function in relation to output rates. The analysis may be broken down into three distinct phases. The first phase requires determination of the technical specification of the equipment. The second phase will be an industrial engineering study of the production process. The third phase will include the development of cost and price information in US terms (in a form suitable for OER/IA translation into Soviet terms).

Justification: The Surface-to-Air missile system using the S-300 equipment is a Soviet air defense weapon designed for use against high-speed bombers. Many reports concerning this system have been accumulated. These are almost exclusively technical in nature, although they contain sufficient detail on circuit design, construction methods, and operational philosophy to suggest that exploitation in economic terms would be profitable. When combined with other information in OER the results of this project will permit a more rigorous accounting than has heretofore been possible of Soviet capabilities in a highly critical field. Specifically the study will permit OER to relate the production of S-300 systems to other weapons systems and to the total industrial base available. The necessary allocations of economic effort to accommodate any given level of S-300 production may be measured to aid in defining the impact of this program on other electronics requirements. Maximum production rates to support an extension of this system to other key Soviet cities would also be an important factor in the OER use of this study. The project will be coordinated with the Office of Scientific Intelligence.

Proposed Contractor: [REDACTED]

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